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EXAMINER

PRUCHNIC, STANLEY J

ART UNIT	PAPER NUMBER
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2859

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/654,851

Applicant(s)

BLAKELEY, GERALD W.

Examiner

Stanley J. Pruchnic, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

### *Oath/Declaration*

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application, by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

the declaration filed 04 September 2003 incorrectly identifies the United States provisional application for which Applicant has claimed the benefit under 35 U.S.C. Section 119(e) as "09/415,909". The provisional application serial number is: --60/415,909--.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3-5, 9, 14-16, 19 and 23 are FINALLY rejected under 35 U.S.C. 102(b) as being anticipated by Hollander *et al.* (U. S. Pat. No. 6,095,682, hereinafter **HOLLANDER**).

**HOLLANDER** discloses a multimeter 1 (e.g., see Fig. 1), and further regarding claim 19, a "digital" multimeter, with non-contact temperature measurement capability as claimed by Applicant in Claims 1, 3-5, 9, 14-16, 19 and 23, comprising:

a (digital) multimeter 1 contained in a housing and having outputs relating to measured electrical parameters (Col. 5, Lines 27-31);

an output display 2 (Col. 5, Lines 12-13) ), and further regarding claim 19, a "digital" output display, contained in the housing, for displaying results to a user;

a non-contact optically-based (infrared) temperature sensing device (Col. 5, Lines 22-25) coupled to (**HOLLANDER** discloses the device is "built-in" so it is both "coupled to" the housing as claimed by Applicant in Claim 1 and "within" the housing as claimed by Applicant in Claim 19), having an output related to sensed temperature; and circuitry (e.g., Col. 12, Lines 58-65) contained in the housing for processing both the multimeter outputs and the temperature sensing device output, and transmitting

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(Col. 5, Lines ) the processed output to the output display as claimed by Applicant in **Claims 1, 3 and 19**.

**Regarding Claim 4: HOLLANDER** further discloses the multimeter with non-contact temperature measurement capability in which the temperature sensing device further comprises a lens 113, proximate the infrared sensor, for focusing entering radiation (Col. 6, Lines 19-26) and this would also inherently function as claimed for protecting the infrared sensor as claimed by Applicant.

**Regarding Claim 5: HOLLANDER** further discloses the temperature sensing device defines a sense axis that is fixed relative to the housing, as claimed by Applicant, (Col. 5, Lines 27-31) which permits the user to aim the pyrometer towards a target.

**Regarding Claims 9 and 23: HOLLANDER** further discloses an optical aiming device 104 coupled to the housing, to assist the user in aiming the temperature sensing device at an object whose temperature is to be measured.

**Regarding Claims 14-15: HOLLANDER** further discloses the multimeter 901 further comprising a switch 907 (which is a user-operable electrical device; Fig. 28; Col. 15, Lines 53-62) for switching at least some of the circuitry between the multimeter outputs and the temperature sensing device output; and for selectively routing the temperature sensing device output to the circuitry.

**Regarding Claim 16: HOLLANDER** further discloses a user-operable electrical device for selectively holding (in data logger 819, for example; Col. 15, Lines 1-6) the sensed temperature as claimed by Applicant.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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6. Claim 2 is **FINALLY** rejected under 35 U.S.C. 103(a) as being unpatentable over **HOLLANDER** in view of **MICHALSKI et al.** (Temperature Measurement, published by Wiley and Sons, pages 152-180, (1991), hereinafter **MICHALSKI**).

**HOLLANDER**, to summarize, discloses all the limitations as claimed by Applicant in Claim 2, as described above in Paragraph 3 as applied to Claims 1, 3-5, 9, 14-16, 19 and 23, further including the non-contact temperature sensing device having a control 9 for variation of the emissivity factor so that the emissivity value is adjustable from 0.1 to 1 (Col. 5, Lines 24-41).

**HOLLANDER** as described above, does not disclose the non-contact temperature sensing device has a fixed emissivity as claimed by Applicant in Claim 2.

**MICHALSKI** defines the term "spectral emissivity", or "emissivity", as is commonly used in the art of non-contact temperature measurement to refer to the ratio of spectral radiant intensity of a non-black body radiator to the spectral radiant intensity of a black body at the same temperature (e.g., see Pages 157-159). **MICHALSKI** teaches that knowledge of the emissivity of the target material is needed in order to calculate corrections to the indicated temperature of radiation pyrometers (Page 158).

**MICHALSKI** teaches (see Section 7.3.5, Pages 164-165) that total radiation pyrometers are calibrated under the assumption that the measuring target is a black body (whose emissivity is defined as 1, as is very well known in the art). **MICHALSKI** further teaches that the indicated temperature  $T_i$  of a total radiation pyrometer receiving radiant heat flux from a target that is **not** a blackbody (i.e., whose emissivity is some value less than 1), the target being at a temperature  $T_t$ , must be corrected by a calculation using the actual emissivity of the target. See also Equation 7.38 (on Page 165) and Fig. 7.6 (on page 166), which teach that the correction is made by using a fixed emissivity of the pyrometer of 1.

**MICHALSKI** further discloses a total radiation pyrometer ("Compac 3", Fig. 7.17; Pages 177-178) which includes digitally displayed (indicated) temperature readings "with a preset value for the emissivity".

**MICHALSKI** is evidence that ordinary workers in the field of temperature measurement would recognize the benefit of using a fixed (preset) value for emissivity as taught by **MICHALSKI** for the adjustable value of **HOLLANDER** in order to correct the indicated reading of the pyrometer after making the measurement, i.e., recording the indicated temperature value, since the emissivity value of the target surface may not be known beforehand, or may be incorrectly estimated at the time of the measurement.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute a fixed emissivity value for the adjustable value of **HOLLANDER** in order to be able to correct for the emissivity of the target surface by means of an equation or chart subsequent to recording the indicated temperature value as taught by **MICHALSKI**.

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7. **Claims 6-8** are FINALLY rejected under 35 U.S.C. 103(a) as being unpatentable over **HOLLANDER** in view of **BARTOSIAK et al.** (U. S. Pat. No. 5,011,296, hereinafter **BARTOSIAK**).

**HOLLANDER**, to summarize, discloses all the limitations as claimed by Applicant in **Claims 6-8** as described above in Paragraph 3 as applied to Claims 1, 3-5, 9, 14-16, 19 and 23 including a temperature sensing device coupled to the housing (as claimed by Applicant in Claim 1) having a sense axis directed toward the IR sensing element (detector). **HOLLANDER** does not explicitly disclose that the sense axis is **adjustable** relative to the housing, as claimed by Applicant in Claim 6; and **mounted in a mount that is coupled to and movable** relative to the housing as claimed by Applicant in Claim 7; and **rotatably coupled** to the housing as claimed by Applicant in Claim 8.

**BARTOSIAK** discloses a remote pickup head 12, part of an infrared thermometer, rotatably coupled to a mount 28 (housing 28 of sensor head 20; see Figs. 2A, 2D; Col. 3, Lines 28-35) by threaded cable connector 31, whereby the sense axis (of pickup head 12) is coupled to and movable relative to the housing 28.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the remote pickup head with adjustable sense axis for the sense axis fixed to the housing of **HOLLANDER** in order to provide for remote measurement of high temperature processes (Col. 3, Lines 1-11) as taught by **BARTOSIAK**.

8. **Claims 20-22** are FINALLY rejected under 35 U.S.C. 103(a) as being unpatentable over **HOLLANDER** in view of **ANDERSON et al.** (U. S. Pat. No. 4,045,670, hereinafter **ANDERSON**).

**HOLLANDER**, to summarize, discloses all the limitations as claimed by Applicant in **Claims 20-22** as described above in Paragraph 3 as applied to Claims 1, 3-5, 9, 14-16, 19 and 23 including a temperature sensing device within to the housing (as claimed by Applicant in Claim 19) having a sense axis directed toward the IR sensing element (detector). **HOLLANDER** does not explicitly disclose that the sense axis is **adjustable** relative to the housing, as claimed by Applicant in Claim 20; and **mounted in a mount that is coupled to and movable** relative to the housing as claimed by Applicant in Claims 21; and **rotatably coupled** to the housing as claimed by Applicant in Claim 22.

**ANDERSON** discloses IR detector 49 (See Figs. 1-2), mounted in a bracket (in phantom in Fig. 1) by a screw, as shown in Fig. 2. **ANDERSON** discloses or suggests that the sensing axis of the IR detector 49 is directed through the center of lens 19 by means of dichroic mirror 47 (Col. 3, Lines 5-24), and parallel to the housing cover 13.

**ANDERSON** is evidence that ordinary workers in the field of infrared temperature sensors would recognize the benefit of using an rotatably coupled adjustable mount for coupling the IR detector to the housing as suggested by **ANDERSON** for the IR detector and housing of **HOLLANDER** in order to align the sensing axis to be parallel to the

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housing cover 13 in order to enable more intuitive aiming of the device, as is commonly done in the art.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the adjustable mount for IR detector forming the sense axis of HOLLANDER in order to provide a more intuitive 1<sup>st</sup> approximation of aiming of the device as suggested by ANDERSON.

9. Claims 10-12 and 24-26 are FINALLY rejected under 35 U.S.C. 103(a) as being unpatentable over **HOLLANDER** in view of LITVIN *et al.* (U. S. Pat. No. 5,626,424, hereinafter **LITVIN**).

**HOLLANDER**, to summarize, discloses all the limitations as claimed by Applicant in **Claims 10-12 and 24-26** as described above in Paragraph 3 as applied to Claims 1, 3-5, 9, 14-16, 19 and 23 including an optical aiming device comprising a laser (e.g., see Figs. 1, 2C; and Col. 16, Lines 23-33) which defines an aiming axis. **HOLLANDER** further discloses that the laser is ***mounted in a mount (sighting means 805) that is coupled to and movable*** relative to the housing.

**HOLLANDER** does not explicitly disclose that the aiming axis defined by the laser is ***adjustable*** relative to the housing as claimed by Applicant in Claims 10 and 24;

**HOLLANDER** does not explicitly disclose that the optical aiming device ***mount 805*** is movable relative to the housing in order to allow the user to aim the optical aiming device as claimed by Applicant in Claims 11 and 25; and

**HOLLANDER** does not explicitly disclose that the optical aiming device mount is ***rotatably coupled to the housing*** as claimed by Applicant in Claims 12 and 26.

LITVIN discloses an adjustable beam alignment system for a non-contact infrared temperature-measuring unit, including beam splitter assembly 20 (See Figs. 1-2) having a beam splitter housing 21. The beam splitter housing 21 is a mount that is rotatably coupled to and movable relative to the housing of the infrared temperature-measuring unit, which functions to make the aiming axis (laser beams 62 and 64) ***adjustable*** relative to the housing, for example, by adjusting mirror element 40 (Col. 2, Line 42 - Col. 3, Line 28).

LITVIN further discloses that it is advantageous to adjust the aiming axis in order to benefit from enabling the operator to accurately position the sensor so the IR radiation from the target 60 is focused on the IR detector 16 (Col. 2, Lines 1-6).

LITVIN is evidence that ordinary workers in the field of infrared temperature measuring devices would recognize the benefit of using the adjustable aiming device including mount rotatably coupled to the housing as taught by LITVIN for the laser aiming system of HOLLANDER in order to more accurately position the sensor during assembly.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the adjustable aiming device including mount rotatably coupled to the housing for the laser aiming system of HOLLANDER in order to ore accurately position the sensor as taught by LITVIN.

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10. Claim 13 is **FINALLY** rejected under 35 U.S.C. 103(a) as being unpatentable over **HOLLANDER** in view of **AOYAMA et al.** (U. S. Pat. No. 6,280,082, hereinafter **AOYAMA**).

**HOLLANDER**, to summarize, discloses all the limitations as claimed by Applicant in Claim 13, as described above in Paragraph 3 as applied to Claims 1, 3-5, 9, 14-16, 19 and 23, further including the limitation that the optical aiming device comprises a laser device (Col. 10, Lines 46-52). But **HOLLANDER** does not explicitly disclose the optical aiming device comprises a diode laser device as claimed by Applicant.

**AOYAMA** teaches it is known in the art to use a laser diode in a light projecting optical aiming device for an infrared thermometer (Col. 5, Lines 48-54; Col. 6, Line 52 - Col. 7, Line 15), e.g., "The light emitter 13 includes a laser diode or the like, and outputs a laser beam in a visible spectrum along an optical axis L2. The condenser lens 14 makes the visible light output from the light emitter 13 parallel with the optical axis L2."

**AOYAMA** is evidence that ordinary workers in the field of aiming systems for infrared temperature measuring devices would recognize the benefit of using a diode laser as taught by **AOYAMA** for the laser of **HOLLANDER** in order to enable pulsed operation providing lower average luminance level for safety but higher brightness for visibility (Col. 6, Line 52 - Col. 7, Line 15).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute a laser diode for the laser of **HOLLANDER** in order to provide higher visibility with safety as taught by **AOYAMA**.

11. Claims 17-18 and 27-28 are **FINALLY** rejected under 35 U.S.C. 103(a) as being unpatentable over **HOLLANDER** in view of **WADMAN** (U. S. Pat. No. 5,460,451).

**HOLLANDER**, to summarize, discloses all the limitations as claimed by Applicant in Claims 17-18 and 27-28, as described above in Paragraph 3 as applied to Claims 1, 3-5, 9, 14-16, 19 and 23 further including circuitry that determines the sensed temperature based on the output of the temperature sensing device using a control 9 for variation of the emissivity factor; and **HOLLANDER** discloses that emissivity is adjustable from 0.1 to 1 (Col. 5, Lines 24-41), so **HOLLANDER** discloses the emissivity is less than or equal to one. **HOLLANDER** as described above, does not disclose using a fixed emissivity in which the fixed emissivity is less than one as claimed by Applicant.

**WADMAN** discloses emissivity has a constant value in many processes, consequently its value is to be determined only once (Col. 1, Lines 19-46).

**WADMAN** is evidence that ordinary workers in the field of temperature measurement would recognize the benefit of using a fixed value for emissivity as taught by **WADMAN** for the adjustable value of **HOLLANDER** in order to simplify the operation of the device, in accordance with conditions of the particular application, *i.e.*, the intended use.



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Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute a fixed emissivity value for the adjustable value of HOLLANDER in order to simplify the operation of the device as suggested by WADMAN.

### ***Response to Arguments***

12. Applicant's arguments filed 13 December 2004 have been fully considered but they are not persuasive.

13. Regarding the rejection of Claims 1 and 19, *etc.*, under 35 USC 102(b) as being anticipated by HOLLANDER: In Applicant's Response, filed 13 December 2004, on Page 7, "...Applicant acknowledges that Hollander discloses a multimeter with a built-in infra-red sensor for non-contact temperature measurement as shown in Hollander's Figure 1," -- but Applicant then argues that "Hollander does not disclose a multimeter with a built-in temperature sensor with circuitry contained in the housing for processing both the multimeter outputs and the temperature sensing device output, and transmitting the processed output to the output display as is claimed in both of the Applicant's independent claims 1 and 19."

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (*i.e.*, a "built-in temperature sensor...") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Claim 1 does not require a "non-contact infrared temperature sensing device" to be "within the housing" as is required by Claim 19. Claim 1 only requires the "non-contact optically-based temperature sensing device" to be "coupled to the housing".

14. Applicant further argues: "Although the Examiner refers to col. 12, lines 58-65 of Hollander, that portion of Hollander's specification describes the device shown in Figures 18, 19, and 20 which does not include a multimeter and is not built-in. Hollander does not describe or suggest that Hollander's device shown in Figure 1 may be combined with Hollander's very different device shown in Figures 18-20. In fact, Hollander teaches away from such a combined device by virtue of Hollander's

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pyrometer shown in Figures 4 and 5 with a laser sighting device and an external multimeter housing 106 provided on the top of the pyrometer.”

In response to applicant's arguments against Hollander's various embodiments and features individually, the entire disclosure of HOLLANDER, considered as a whole, has been put forth as anticipating Applicant's claimed invention(s), as claimed in independent Claims 1 and 19, *etc.* The embodiment of Fig. 1 was cited as exemplary of the teachings provided in the disclosure of HOLLANDER. Moreover, it is considered that the exemplary embodiments may be combined as taught by HOLLANDER without destroying the teaching as a whole, since the purpose of HOLLANDER's invention is to provide a unitary instrument capable of single hand operation, the instrument including a multimeter with display and a non-contact temperature sensing device (radiometer) as claimed by HOLLANDER in his Claim 2.

As a further illustration, other embodiments also show that HOLLANDER anticipates Claims 1 and 19 (*etc.*) as follows:

**HOLLANDER** discloses a multimeter 114 (e.g., see Fig. 6; and further regarding Claim 19, a “digital” multimeter) with non-contact temperature measurement capability as claimed by Applicant in Claims 1 and 16, comprising:

a (digital) multimeter 114 contained in a housing 106 (Figs. 3-5) and having “outputs” (or “ports” at the end of leads 111A; Fig. 6; Col. 6, Lines 56-67) relating to measured electrical parameters;

an output display 107 (and further regarding Claim 19, a “digital” output display) contained in the housing 106, for displaying results to a user;

a non-contact optically-based (and further regarding Claim 19, “infrared”-based, “optically-based considered to include the “infrared” portion of the spectrum) temperature sensing device (Col. 6, Lines 61-67) coupled (via leads that plug into ports 115, 116) to the housing, having an output related to sensed temperature as claimed by Applicant in Claim 1 (and regarding Claim 19, HOLLANDER discloses the infrared temperature sensing device within the housing (as shown in Fig. 1).

**HOLLANDER** further discloses circuitry (e.g., Col. 6, Lines 26-33) contained in the housing 106 (Figs. 3-5; the circuitry inside the housing of the multimeter of Fig. 6) for processing both the multimeter outputs and the temperature sensing device output, and transmitting (Col. 6, Lines 56-67) the processed output to the output display as claimed by Applicant in **Claims 1, 3 and 19**. HOLLANDER discloses (e.g., see Fig. 8) that the pyrometer can be connected to the multimeter and, alternatively, it can be integral with the multimeter (as shown in Fig. 1). Therefore, these are art-recognized equivalent options HOLLANDER discloses for combining the multimeter housing and pyrometer.

15. Applicant further argues: “Hollander teaches away from such a combined device [emphasis added] by virtue of Hollander's pyrometer shown in Figures 4 and 5 with a laser sighting device and an external multimeter housing 106 provided on top of the pyrometer.

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In response, the Examiner reiterates, as stated above, that the purpose of HOLLANDER's invention is to provide a unitary instrument.

16. Applicant further argues: "Hollander also teaches away from the combination [emphasis added] because Hollander's built-in device shown in Figure 1 requires an adjustable emissivity (col. 5, lines 22-26)."

In response, the Examiner does not consider the emissivity control (or the lack thereof) to be pertinent with respect to the temperature sensor being built-in and the circuitry contained in the multimeter housing being for processing both the multimeter outputs and the temperature sensing device output, and transmitting the processed output to the display, since a controllable/adjustable emissivity correction setting is only an optional feature of a pyrometer, as is well known in the art of optical pyrometry. Moreover, see **MICHALSKI**, as described above in Paragraph 6 with regard to amended Claim 2.

17. Applicant further argues: "As the Examiner pointed out, although Hollander generally discloses a multimeter with a built-in temperature sensor, Hollander does not disclose a temperature sensing device having a fixed emissivity. Instead, Hollander, despite the prior teaching of Wadman, specifically teaches that Hollander's emissivity for the infra-red measurement is adjustable from 0.1 to 1.0 (col. 5, lines 22-26), thus teaching away from a fixed emissivity. Wadman does not teach or suggest that a fixed emissivity would be appropriate or applicable in all situations and, in fact, the only example Wadman provides for a situation in which there would be a fixed emissivity is within an oven. Further, Wadman does not describe a temperature sensor that applies a fixed emissivity."

In response, in order to present a *prima facie* case of obviousness under 35 USC 103(a), it is not necessary to that the prior art teach or suggest that a fixed emissivity would be appropriate or applicable in all situations. Moreover, regarding Claims 17 and 27, these limitations are directed towards the intended use of a fixed emissivity [correction value], therefore it is considered that HOLLANDER's adjustable emissivity control is not required to be adjusted in normal use. Thus, HOLLANDER's circuitry is considered capable of being used as claimed by Applicant, *i.e.*, determining a sensed temperature based on the output of the temperature sensing device "using a fixed emissivity". It could also be argued that one of ordinary skill in the art would have found it obvious to use a fixed emissivity value of one when HOLLANDER's device is used for its intended purpose of determining the emissivity of the surface in combination with a contact temperature measurement.

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18. Regarding the rejection of Claims 6-8 under 35 USC 103(a) as being unpatentable over HOLLANDER in view of BARTOSIAK.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to do so is found in BARTOSIAK and in the knowledge generally available to one of ordinary skill in the art. BARTOSIAK teaches that it is known in the art to use flexible fiber optic cable in order to provide for remote measurement of high temperature processes (Col. 3, Lines 1-11). One having ordinary skill in the art would have found it useful to fix the housing in one position while providing a movable sense axis (oriented with the fiber's longitudinal axis) in order to provide flexibility in aiming the sensor field of view to include the desired portion of the target surface.

19. Regarding the rejection of Claims 20-22 under 35 USC 103(a) as being unpatentable over HOLLANDER in view of ANDERSON.

In response to applicant's argument that ANDERSON does not teach or suggest an adjustable sense axis relative to a housing, but instead the beamsplitter is fixed securely in a place, not being adjustable or rotatable.

ANDERSON discloses IR detector 49 (See Figs. 1-2), mounted in a bracket (in phantom in Fig. 1) by a screw, as shown in Fig. 2. ANDERSON discloses or suggests that the sensing axis of the IR detector 49 is directed through the center of lens 19 by means of dichroic mirror 47 (Col. 3, Lines 5-24), and parallel to the housing cover 13.

In normal use, all these optical components will be fixed in their aligned positions. However, each of the components are required to be aligned, at least during the construction/assembly of the device. Ordinary workers in the field of infrared temperature sensors would recognize the benefit of using a rotatably coupled adjustable mount (such as a screw in a bracket as shown by ANDERSON) for coupling the IR detector to the housing in order to align the optics at least during the assembly of the device. These features are known in the art to enable re-alignment after the device has been in use, since optics may be jarred use by rough handling of the device, etc.

20. Regarding the rejection of Claims 10-12 and 24-26 under 35 USC 103(a) as being unpatentable over HOLLANDER in view of LITVIN. Applicant's arguments with respect to Claims 10-12 and 24-26 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in a form PTO-892 and not mentioned above disclose related temperature measurement devices and methods

- Fujima (US 5860740) teaches having predetermined values of emissivity;
- Christol et al (US 4634294) requires an emissivity input;
- U. S. Patents 4743122 and RE34507 disclose peak hold circuits;
- U. S. Patent 4986672 discloses structure forming a sense axis and discloses use of a predetermined emissivity; and
- U. S. Patents 5836694 and 6234669 disclose laser-aiming structures.

Newly cited prior art:

- Mack (US 4896281 A) teaches that it is known in the art for non-contact thermal imagers to lack adjustment controls for correction of temperature readings due to emissivity of the target surface.
- Nagasaka et al (US 4,773,766 A) discloses a radiation thermometer may include an assembly of a non-contact temperature detector and a data recorder which are separable from each other or a combination which can be electrically connected (Col. 8, Lines 4-9).

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stanley J. Pruchnic, Jr., whose telephone number is

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(571) 272-2248. The examiner can normally be reached on weekdays (Monday through Friday) from 8:30 AM to 4:00 PM.

The **Official FAX** number for Technology Center 2800 is (703) 872-9306 for **all official communications**.

Any inquiry of a general nature or relating to the status of this application or proceeding may be directed to the official USPTO website at [www.uspto.gov](http://www.uspto.gov) or you may call the **USPTO Call Center** at 800-786-9199 or 703-308-4357. The Technology Center 2800 Customer Service FAX phone number is (703) 872-9317.

The cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site, from the Office of Public Records and from commercial sources.

Private PAIR provides external customers Internet-based access to patent application status and history information as well as the ability to view the scanned images of each customer's own application file folder(s).

For inquiries relating to Patent e-business products and service applications, you may call the **Patent Electronic Business Center (EBC)** at 703-305-3028 or toll free at 866-217-9197 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: [ebc@uspto.gov](mailto:ebc@uspto.gov). Additional information is available on the Patent EBC Web site at: <http://www.uspto.gov/ebc/index.html>.

SJP

Stanley J. Pruchnic, Jr.  
2/26/05

G. Verbitsky

GAIL VERBITSKY  
PRIMARY EXAMINER